

We claim:

1. A process for preparing UV-transparent pressure sensitive adhesives which have a UV transparency at 300 nm of more than 95%, comprising the steps of:

(a) polymerizing a monomer composition comprising

(a1) from 75 to 99.8% by weight of acrylic esters and/or methacrylic esters of the formula $\text{CH}_2=\text{CH}(\text{R}_1)(\text{COOR}_2)$, where R_1 is H or CH_3 and R_2 is an alkyl chain having 1 to 20 carbon atoms;

(a2) from 0 to 10% by weight of acrylic acid and/or methacrylic acid of the formula $\text{CH}_2=\text{CH}(\text{R}_1)(\text{COOH})$, where R_1 is H or CH_3 ;

(a3) from 0.2 to 5% by weight of olefinically unsaturated monomers which contain at least one UV-crosslinking functional group per monomer; and

(a4) from 0 to 20% by weight of olefinically unsaturated monomers which are different than the olefinically unsaturated monomers (a3) and which contain at least one functional group per monomer;

to form a copolymer composition having a weight average molecular weight M_w of less than 300,000 g/mol, and

(b) mixing in from 2 to 20% by weight, based on the weight of copolymer composition, of a silicate filler before or after the polymerization of the monomer composition in step (a), the silicate filler having a maximum particle diameter of 50 nm.

2. The process as claimed in claim 1, comprising the further step of adjusting the residual solvent content of the pressure sensitive adhesive to less than 1%, based on the weight of pressure sensitive adhesive.

3. The process as claimed in claim 2, wherein the residual solvent content is adjusted to less than 0.2%, based on the weight of pressure sensitive adhesive.

4. The process as claimed in claim 1, wherein the copolymer composition obtained in step (a) is melted and then the silicate filler is added and distributed homogenously in the melted copolymer composition.
5. The process as claimed in claim 1, wherein the polymerization in step (a) is a free-radical addition polymerization.
6. The process as claimed in claim 5, wherein the monomer composition is heated to a temperature of between 50 and 160°C.
7. The process as claimed in claim 1, wherein the monomer composition in step (a) is polymerized in bulk.
8. The process as claimed in claim 7, wherein the polymerization is initiated with UV light, from 10 to 30% of the monomer composition is polymerized, and the resulting mixture is transferred to water and polymerized to completion.
9. The process as claimed in claim 1, wherein the monomer composition in step (a) is polymerized by anionic addition polymerization.